

YHorton_Job_1_of_1

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Document	Selected Pages	Page Range
US005333424	6	1 - 6
Total (1)	6	-

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Summary

Document	Pages	Printed	Missed
US006073402	6	6	0
US004910280	15	15	0
Total (2)	21	21	0

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Summary

Document	Pages	Printed	Missed
US005333424	6	6	0
Total (1)	6	6	0

CGreen3_Job_1_of_1

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Document Listing

Document	Selected Pages	Page Range
US006073402	6	1 - 6
US004910280	15	1 - 15
Total (2)	21	-

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Summary

Document	Pages	Printed	Missed
US004711059	6	6	0
Total (1)	6	6	0

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Look up **reflectivity** at Dictionary.com or Merriam-Webster

Related phrases

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\(z\)](#)

[Composite Reflectivity
Contour \(CRC\)](#)

[Differential Reflectivity
\(Z dr\)](#)

[Minimum Reflectivity
Difference](#)

[Composite
Reflectivity](#)

[radar reflectivity
plate](#)

[Reflectivity Factor](#)

Definitions for **Reflectivity** from the web

- The radar operator uses this radar product to determine the strength or the intensity of a precipitation target. In order for the radar to calculate the reflectivity, it sends out a small burst of energy. This energy strikes the small water particles located in the precipitation target. For simplification sake, it is assumed that these water particles are evenly spread throughout the precipitation target. The more of these particles located in the precipitation target, the greater the return of energy returned back to the radar. One will see a greater reflectivity return from heavy rain than light rain. Reflectivity is expressed in the units of dBZ where dB stands for decibels and the Z stands for reflectivity. See dBZ and VIP.
http://www.weather.about.com/library/glossary/blglossary_r.htm
- Property of illuminated objects to reradiate a portion of the incident energy. Reflectivity, in general, is larger in the specular direction for smaller surface roughness. For side looking radars, backscatter is the observable portion of the energy reflected. Backscatter, in general, is increased by greater surface roughness. In general, reflectivity is increased for higher conductivity of the scattering surface. The relative strength of radar reflectivity is tabulated by sigma, for discrete objects, and by sigma nought for natural terrain surfaces.
<http://nivel.euitto.upm.es/tele/AYU/Dic/RADA/RADARRY.HTM>
- The amount of light and energy that bounces off a surface relative to the amount of light and energy that struck the surface. A mirror is an example of an object with high reflectivity. The ocean has low reflectivity. Reflectivity also is called albedo.
<http://www.glacier.rice.edu/misc/glossary.html>
- A fundamental property of a material that has a reflective surface and is sufficiently thick to be opaque. One may further qualify it as spectral reflectivity.
<http://www.cossa.csiro.au/lb/lbbook/glossary/glossr.htm>
- The measure of the efficiency of a radar target in intercepting and returning Electro Magnetic Energy. Reflectivity depends upon the size, shape, aspect and dielectric properties at the surface of the target.
<http://www.crh.noaa.gov/hsd/hydefq-z.html>
- The fraction of the incident radiant energy reflected by a surface that is exposed to uniform radiation from a source that fills its field of view. See also: REFLECTANCE.
<http://nivel.euitto.upm.es/tele/AYU/Dic/GLOS/GLOS.R.HTM>
- Ability of a surface to reflect incident energy.
<http://www.gaf.de/presshelp/glossary/p81.htm>
- (sol) (meas). [1] The ability to reflect SOLAR RADIATION, which is possessed to some degree by all materials. It is called the ALBEDO in atmospheric references. [2] The ratio of RADIANT ENERGY reflected by a body to that

Radiation: The emission and propagation of energy through space or through a material medium in the form of waves; eg, the emission and propagation of electromagnetic waves, or of sound and elastic waves. The process of emitting radiant energy.

Radiation temperature: Temperature of a blackbody that gives the same radiant exitance as the object being studied.

Radiometer: An instrument for quantitatively measuring the intensity of electromagnetic radiation in some band of wavelengths in any part of the electromagnetic spectrum. Usually used with a modifier, such as an IR radiometer or a microwave radiometer.

Radiometric correction: Correction of gain and offset variations in satellite data.

Radiometric degradation: The effects of atmosphere and imaging systems that result in a blurred image. Degradation resulting from factors such as non-linear amplitude response, vignetting, shading, transmission noise, atmospheric interference or variable surface illumination.

Radiometric resolution: Amount of energy required to increase a remotely sensed pixel value by one quantisation level (or DN).

Radiometric transformations: Adjustments made in data to convert the raw multi-spectral data to a radiometrically consistent set of measurements; may be used to compensate for sensor system irregularities or environmental variations.

Radiometry: Measurement of radiant energy based on fundamental physical units of energy and flux. Remotely sensed measurements are usually (attempted to be) related back to this measurement system.

Range, dynamic: The ratio of maximum measurable signal to minimum detectable signal. The upper limit usually is set by saturation and the lower limit by noise.

RAR: Real-Aperture Radar.

Raster: Grid. A raster display device stores and displays data as horizontal rows of uniform grid or picture cells (pixels). Contrasts with vector.

Ratio image: An image in which one of the original data channels is replaced by the ratio of two or more of the raw data or transformed data channels. The 'greenness ratio' (NIR/red) is an example of a ratio channel.

Raw data image: The image of radiance values as received by the sensor device and processed into a basic CCT.

Rayleigh scattering: The wavelength-dependent scattering of electromagnetic radiation by particles in the atmosphere much smaller than the wavelengths scattered.

RBV: Return Beam Vidicon.

RCP: Relative Control Point.



Glossary of Remote Sensing

ABSORPTION

The process by which radiant energy is absorbed and converted into other forms of energy.

ACTIVE SYSTEM

A remote sensing system that provides its own source of energy and records the energy reflected or refracted back to the sensor.

ADVANCED VERY HIGH RESOLUTION RADIOMETER (AVHRR)

Crosstrack multispectral scanner on a NOAA polar-orbiting satellite that acquires five spectral bands of data (0.55 to 12.50 μ m) with a ground resolution cell of 1.1 by 1.1 km.

ALBEDO

Ratio of the amount of electromagnetic energy reflected by a surface to the amount of energy incident upon it.

ALTIMETER

Instrument for measuring platform altitude.

ANALOG DISPLAY

A form of data display in which values are shown in graphic form, such as curves. Differs from digital displays in which values are shown as arrays of numbers.

ATMOSPHERIC-ABSORPTION

The process whereby some or all of the energy of sound waves or electromagnetic waves is transferred to the constituents of the atmosphere.

ATMOSPHERIC CORRECTION

Image-processing procedure that compensates for effects of selectivity scattered light in multispectral images.

AUTOMATIC CLASSIFICATION

Process whereby data (usually image data) are analysed and classified according to automatic or semi-automatic classification algorithms as opposed to purely manual methods.

AZIMUTH

Geographic orientation of a line given as an angle measured in degrees clockwise from North.

BACKSCATTER

In radar, the portion of the microwave energy scattered by the terrain surface directly back toward the antenna to be received and recorded by the sensor.

BAND

A wavelength interval in the electromagnetic spectrum. For example, in Landsat images the bands designate specific wavelength intervals at which images are acquired. The term 'channel' is also in common use with the same meaning as 'band'.

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R

Radar: RAdio Detection And Ranging. A method, system or technique, including equipment components, for using beamed, reflected, and timed electromagnetic radiation to detect, locate and (or) track objects, to measure altitude and to acquire a terrain image. In remote sensing of the Earth's or a planetary surface, it is used for measuring and, often, mapping the scattering properties of the surface.

Radar beam: The vertical fan-shaped beam of electromagnetic energy produced by the radar transmitter.

Radar reflectivity: The measure of the efficiency of a radar target in intercepting and returning a radar signal. This depends upon the size, shape, aspect, and the dielectric properties at the surface of the target and includes the effects of not only reflection but also scattering and diffraction.

Radarsat: Polar-orbiting, Canadian active microwave satellite launched in 1995.

Radar scatterometer: A non-imaging device that records radar energy backscattered from terrain as a function of the depression angle.

Radar shadow: A dark area of no return on a radar image that extends in the far-range direction from an object on the terrain that intercepts the radar beam.

Radar, synthetic aperture (SAR): A radar in which a synthetically long apparent or effective aperture is constructed by integrating multiple returns from the same ground cell, taking advantage of the Doppler effect to produce a phase history film or tape that may be optically or digitally processed to reproduce an image.

Radiance: Total energy radiated by an object of unit area per solid angle of measurement. Standard measurement unit $W m^{-2}$. This geometric radiation quantity is what is measured by remote sensing devices.

Radiant density (W): Total energy radiated by an object of unit volume in all directions. Standard measurement units $J m^{-3}$.

Radiant energy (Q): Total energy radiated in all directions. Standard measurement unit J.

Radiant exitance (M): Total energy radiated in all directions from an object of a unit area per unit time. Standard measurement unit $W m^{-2}$

Radiant flux (F): Total energy radiated in all directions from an object per unit time; sometimes referred to as radiant power. Standard measurement unit W.

Radiant intensity (I): Total energy radiated from an object per solid angle of measurement. Standard measurement unit $W sr^{-1}$.

Radiant power: Rate of change of radiant energy with time. May be further qualified as spectral radiant power, at a given wavelength. Also called radiant flux.

Real-aperture radar (RAR): SLAR system in which azimuth resolution is determined by the physical length of the antenna and by the wavelength. The radar returns are recorded directly to produce images; also called brute-force radar.

Real-time: Time in which reporting on events or recording of events is simultaneous with the events. For example, the real time of a satellite is the time in which it simultaneously reports its environment as it encounters it; the real time of a computer is the time during which it is accepting data and performing operations on it.

Rectification: The process of correcting distortions in remotely sensed imagery so that its geometry accurately represents the geometric features of the Earth's surface.

Redundancy: Information in an image which is either not required for interpretation or cannot be seen. Redundancy may be spatial or spectral. It also refers to multi-spectral data where the degree of correlation between bands is so high that one band contains virtually the same information as all of the bands.

Reflectance (r): The ratio of the radiant flux reflected by an object to that incident upon it.

Reflection: Radiation neither absorbed nor transmitted is reflected. Reflection may be diffuse when the incident radiation is scattered upon being reflected from the surface, or specular, when all or most angles of reflection are equal to the angle of incidence.

Reflective infrared: Portion of the electromagnetic spectrum, approximately 0.72-3.0 μm ; often subdivided into near infrared or middle infrared.

Reflectivity: A fundamental property of a material that has a reflective surface and is sufficiently thick to be opaque. One may further qualify it as spectral reflectivity.

Refraction: The bending of electromagnetic radiation waves when they pass from one medium into another having a different index of refraction or dielectric coefficient. Electromagnetic radiation rays also bend in media that have continuous variations in their indices of refraction or dielectric coefficients.

Registration: The process of geometrically matching different spatial data sets, such as imagery and/or maps, so that positions in one data set may be accurately located in others.

Relative Control Points (RCPs): Points which are used to establish the relative geometry between two or more images so that these images can be registered to each other. These may be any features that can be detected and precisely located on both images.

Relief: The vertical changes of an elevation surface.

Relief displacement: A shift in position of the optical image of an object caused by height of the object above or depth below a datum plane.

Remote sensing: In the broadest sense, the measurement or acquisition of information about some property of an object or phenomenon, by a recording device that is not in physical or intimate contact with the object or phenomenon under study.